



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,409	04/30/1999	DENNIS J. O. SHAUGNESSY	1375A1	6842

24959 7590 10/18/2002

PPG INDUSTRIES INC  
INTELLECTUAL PROPERTY DEPT  
ONE PPG PLACE  
PITTSBURGH, PA 15272

EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 10/18/2002

19

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/302,409

Applicant(s)

SHAUGNESSY ET AL.

Examiner

Jennifer McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-36 and 38-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-36 and 38-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 9, 2002 has been entered.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-36, and 38-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims have been amended in response to the 112(2) rejection of the final rejection in Paper No. 13 (April 8, 2002). The claims are indefinite for the following reasons:

Regarding applicant's amending all instance of "zinc stannate" to read "an oxide of an alloy of zinc and tin"; it is not clear why this was done. The term "zinc stannate" was not considered indefinite, and the change has only served to make the claims more confusing. What is the difference between a film of an oxide of an alloy of zinc and tin, and a film of zinc oxide, tin oxide?

Multiple claims refer to ranges and use the language "equal to and greater" or "equal to and lesser". The proper language is ~~equal to or greater~~ and ~~equal to or lesser~~. A value cannot be both equal to *and* greater. It must be "or". Please make the appropriate changes.

Art Unit: 1775

Claim 4, line 7, begins with “first dielectric film” and gives what appears to be choices for what the first film may comprise. Is this supposed to be alternative language? If so, there is no proper alternative language used. The following language is suggested to make the claim definite:

--“first dielectric film comprising at least one film selected from the group consisting of zinc oxide, silicon oxide, tin oxide, silicon nitride, silicon oxynitrate, and zinc stannate, wherein the zinc stannate has zinc equal to or greater than 10 wt% and equal to or less than 90 wt%, and tin equal to or less than 90 and equal to or greater than 10.--

Claim 4, line 18 begins the description of the second dielectric film and states that it comprises at least one film of a zinc oxide, tin oxide film with a certain percentage of Zn and Sn. There appears to be more than one selection for the percentages of the film. Is this meant to be an alternative statement? If so, it is not clear. It is suggested that language similar to that suggested above is used to render the claim definite.

Claim 4, line 28 begins a “wherein” clause which states that the dielectric layer has a “first film of an oxide of an alloy of zinc and tin and this additional film of an oxide of an alloy of zinc and tin is the second such film...”. It is entirely unclear what this statement means. What dielectric layer is being addressed? Is this meant to define the first film as an oxide of an alloy of zinc and tin? If so, what happened to the alternative language of the first dielectric film begun in line 7? What is meant by this film being the second such film? It is unclear how the claims states that this is the first film and then goes on to say that it is the second film. Is this supposed to be a third film in addition to the first and second films already defined in the claim? The claim goes on to compare the weight percentage of the first such film and the second such film. There is no clear comparison to be made because these films have not been clearly defined. Furthermore, what weight percentage is being addressed? Is it the tin, the zinc? Please clarify.

Claim 5, line 2 refers to “the electrical enhancing film”. There is insufficient antecedent basis for this limitation.

Art Unit: 1775

Claim 6 refers to “the electrical enhancing film” in line 4. There is insufficient antecedent basis for this limitation. Is the electrical enhancing film supposed to be the additional film?

Claim 12 uses improper alternative language.

Claim 15 uses improper alternative language.

Claim 18 refers to the first and second dielectric films having films of zinc oxide, or zinc oxide, tin oxide, or a second film of an oxide of an alloy of zinc and tin. How does the film have a film? Is this meant to be an alternative statement? Should it read, --the first dielectric film of the second dielectric layer and the first dielectric film of the third dielectric layer is selected from the group consisting of zinc oxide, zinc oxide-tin oxide, or a second film of zinc stannate, wherein the second film of zinc stannate has a composition different from the first film of zinc stannate.--?

Claim 19 refers to the second film of an oxide of an alloy of zinc and tin with reference to the first and second dielectric layers. The second film is introduced in claim 18 and is only present in the second and third layers. What layers are meant to have this weight percentage range?

Claim 21, line 3, should “first” be --second--?

Claim 21 refers to a second dielectric film closest to the third film. Is there more than one second dielectric film?

Claim 22 uses improper alternative language.

Claim 25 states that the first dielectric film has at least one film of zinc oxide, tin oxide film. How can the film have more than one film? Is this meant to be the layer having more than one film? There also appears to be a choice for the weight percentages of the layer. Is this meant to be alternative?

Claim 26, line 6, should “film” be --films--?

Claim 27 includes a range. How can the zinc be greater than 90 and less than 60 with tin being greater than 10 and less than 40? Please check this range. The same applies to claims 30 and 33.

Claim 28 appears to use alternative language. However, it is not clear when the choices in the selection stop. Is the first film in line 20 part of the selection? There is no proper alternative language.

Art Unit: 1775

The same applies to claim 31.

Claim 29 states that each oxide of an alloy of zinc and tin has a certain weight percent. This is inconsistent with claim 28, which states that the second dielectric film has a different composition than the first dielectric film.

The claims are replete with indefinite and confusing statements. The references to the claims above may not encompass each instance of the indefiniteness. Overall, the claim language is confusing and excessively wordy. Applicant is encouraged to delete unnecessary terms to prevent confusion. Any suggestion is meant to merely attempt to render the claim definite and also attempt to understand the intended limitations of the claims. The suggestions are not meant to overcome prior art rejections.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25, 28, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Depauw et al (GB 2311540A). Depauw et al teach a coated sheet for use in a laminated assembly including a transparent substrate carrying two metal layers formed of silver and three layers of a transparent dielectric material. The dielectric material includes oxides such as tin oxide, zinc oxide, silicon nitride, or a mixture thereof, or a complex of zinc stannate. Each dielectric layer can include more than one of these materials and each layer can be a composite layer formed of successive subsidiary layers of different compositions. A combination of tin oxide and zinc oxide is generally advantageous, whether in an admixture or in successive sub-layers. The coated substrate also has a thin layer of a sacrificial metal,

Art Unit: 1775

such as titanium, provided above and in contact with each metal (silver) layer. Table A shows the successive layers (films) which may be used in forming the dielectric layers of the laminate. Claim 25 simply required that the second dielectric layer comprise a first film of an oxide of an alloy of zinc and tin and a second dielectric film of a different composition. It is clearly taught by Depauw that a combination of tin oxide and zinc oxide is advantageous and that multiple films are used in each dielectric layer. On page 7, Depauw states that each layer can include more than one material and each layer can be a composite of successive layers (films) of *different* composition from each other. Therefore it is clearly taught by Depauw that the layers may comprise multiple films of different compositions and that a combination of tin oxide and zinc oxide is advantageous as an admixture in a film.

### *Response to Arguments*

The changes applicant made to overcome the 112(2) rejections of the previous office action were not sufficient. There are still numerous confusing phrases, which render the claims indefinite.

The prior art rejection regarding claim 4 of Paper No. 13 are withdrawn. The amendments to claim 4 are such that it now cannot be clearly understood. Specifically, it is not clear whether or not there is an additional layer present and what it constitutes, and also what weight percentages are being compared.

Regarding claims 25, 28 and 31, see the comments above.

Art Unit: 1775

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on Monday through Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM  
October 10, 2002

Jennifer McNeil  
Examiner  
Art Unit 1775

  
DEBORAH JONES  
SUPERVISORY PATENT EXAMINER